

135203-2

REMARKS

Claims 1-54 are pending in the present Application. The unamended claims have been presented in this amendment for the convenience of the Examiner. No new matter has been introduced by these amendments. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 1-4, 6-29 and 32-54 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner has indicated that independent claims 1, 14, 17, 24, 26, 39, 42, and 48 are indefinite because the claims recite bare numbers as the molecular weight for the aromatic dianhydride, organic diamine, and aromatic monoamine without reciting how the molecular weights are determined. Applicants respectfully disagree.

Applicants note that claims 14, 17, 39, and 42 are dependent claims. The independent claims are Claims 1, 24, 26, 48, and 49. The molecular weights for the monomer compounds are calculated as a sum of the atomic weights of the constituent atoms. Applicants assert that this is a well known method and would be readily understood by one of ordinary skill in the art.

Claim 23 stands rejected for its use of the phrase "intimately combined" which the Examiner asserts is a relative term for which the Specification does not provide "a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention." (Office Action, page 2) Applicants respectfully disagree.

In paragraph [0034] the specification teaches that the aromatic monoamine and organic diamine may be intimately combined using known methods, illustrative examples of which include combination through a static mixer or mixing in solvent. Applicants assert that by teaching illustrative methods Applicants have conveyed to a practitioner with ordinary skill

135203-2

the meaning of "intimately combined" as the value of thorough, or intimate, mixing of reactants is known and appreciated even by practitioners with minimal skill in the art.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-54 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 4,910, 288 to Dellacoletta in view of U.S. Patent No. 4,675,366 to Evans et al. (Evans) taken with U.S. Patent No. 4,965,337 to Peters et al. (Peters). Applicants respectfully traverse this rejection.

Dellacoletta discloses that the presence of phthalic anhydride m-phenylenediamine imide (PAMI) is related to the plateout phenomenon experienced by some polyetherimides. (Col. 2, line 65 to Col. 3, line 15) Dellacoletta seeks to solve the problem of plateout by altering the method of producing the polyetherimide to limit the production of PAMI. Dellacoletta's method includes partially reacting an aromatic bis(ether anhydride) with an organic diamine under polyetherimide forming conditions to form a prepolymer; reacting the prepolymer with a phthalic anhydride end-capping agent to form an end-capped prepolymer and converting the end-capped prepolymer to polyetherimide (Col. 3, lines 24-37). Dellacoletta does not teach or suggest the use of any end-capping agent aside from phthalic anhydride.

Evans discloses an improved method for preparing a cross-linked polymer. The cross-linked polymer may comprise a polyimide. Evans teaches that dianhydride and diamine monomers are combined with a chain-stopper such as phthalic anhydride, and a catalyst in a solvent to make the polymer. (Col. 8, lines 34-38) Evans does not teach or suggest the use of any chain-stopper aside from phthalic anhydride.

Peters is directed to wholly aromatic polyetherimide further containing sulfur containing groups in the backbone of the polyetherimide. (Abstract) Peters discloses that when making the polyetherimide a chain-stopping agent such as a monofunctional amine, like aniline, or a monoanhydride, like phthalic anhydride, may be included in the reaction mixture (Col. 6, lines 33-37). The examples of Peters employ phthalic anhydride. Peters is

135203-2

completely silent with regard to impurities in the final polyetherimide and hence does not teach or suggest that impurities can be an issue.

The Examiner has asserted that it would have been obvious to one of ordinary skill in the art to use the chain stopper of Peters (aniline) in the method of Dellacoletta with the diamines to prepare a polyetherimide with reduced impurities as taught by Dellacoletta. Applicants earnestly disagree. Dellacoletta is concerned with decreasing, not eliminating, the amount of PAMI in the final polymer and does not contemplate the use of another type of chain stopper. Dellacoletta teaches that PAMI is formed from phthalic anhydride and m-phenylenediamine and so Dellacoletta requires the presence of phthalic anhydride. Because Dellacoletta requires the presence of phthalic anhydride there is not motivation to incorporate the teachings of Peters with regard to aniline as an optional chain stopper. Furthermore, Peters is concerned with making a polyetherimide having sulfur groups in the backbone and, although teaching the possibility of aniline as a chain stopper, does not teach or suggest maintaining impurities below a particular level.

Applicants further maintain that the Examiner has used an improper standard in arriving at the rejection of the above claims under section 103, based on improper hindsight which fails to consider the totality of applicant's invention and to the totality of the cited references. More specifically the Examiner has used Applicant's disclosure to select portions of the cited references to allegedly arrive at Applicant's invention. In doing so, the Examiner has failed to consider the teachings of the references or Applicant's invention as a whole in contravention of section 103, including the disclosures of the references which teach away from Applicant's invention.

135203-2

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 07-0862.

Respectfully submitted,

CANTOR COLBURN LLP

By Patricia DeSimone
Patricia S. DeSimone
Registration No. 48,137

Date: November 30, 2004
Telephone (860) 286-2929
Facsimile (860) 286-0115
Customer No.: 23413